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Commentary

Drug AdministationTargeting Kidneys and Affecting Chronic Kidney Disease Patients

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DESCRIPTION

Uncountable pharmaceuticals are already available on the market, and the prevalence of their prescription is rising constantly, boosting the possibility of negative side effects. Currently, the entire population is exposed to a wide range of harmful, pharmacologic drugs that are utilized without proper justification. Even more drugs are accidentally ingested along with food, natural remedies, and over-the-counter prescriptions, without any medical supervision or prescription. This causes extensive toxicity that can be quite dangerous, is challenging to observe, and typically goes unrecognized. Given that the kidney is the primary organ *via* which most drugs are excreted, it stands to reason that the kidney would be a particular target for their harmful side effects.

One should take care to protect kidneys if have Chronic Kidney Disease (CKD), diabetes, high blood pressure, or if taken certain blood pressure drugs. Blood pressure drugs such as ACE inhibitors and ARBs can help prevent renal failure by delaying the loss of kidney function. One can tell if are taking one of these drugs by looking up the generic name. ARBs, such as lisinopril and losartan, have generic names that end in -sartan, whereas ACE inhibitors have names that end in -pril. One could also take a diuretic, sometimes referred to as a water pill, to help reach blood pressure goals.

A major public health issue on a global scale is Chronic Kidney Disease (CKD). CKD may go unnoticed for a long time. In people with CKD, cardiovascular disease is more prevalent. In both diabetic and non-diabetic hypertensive individuals, microalbuminuria and decreased GFR are well-known cardiovascular risk factors, and many older patients develop or die from cardiovascular disease as opposed to ESRD. The Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT) results demonstrated that chlorthalidone was superior to other medications in preventing one or more major types of cardiovascular disease; however, there was no appreciable difference in all-cause mortality.

Proteinuria, which includes both microalbuminuria and clinical proteinuria, was found to be a key indicator of kidney disease progression in the Prevention of Renal and Vascular End-stage Disease (PREVEND) experiment. By causing pro-inflammatory and profibrogenetic damage to tubular cells, which may promote interstitial fibrosis and tubular atrophy, and which unquestionably has a pathogenic effect on the loss of renal function.

When a doctor observes a change in renal function, he should thoroughly review the patient's drug history to see whether any particular drugs may be to blame for the renal impairment. The concentrations of PCr and electrolytes must be determined, as well as how they have changed over time. Always perform urinanalysis as well as other tests such enzymuria, acid-base status, renal echography, urine cultures, eosinophiluria, and eosinophil blood count.

ACEIs and ARBs have likely been the subjects of the greatest investigation. They are the most frequently prescribed medications for CKD patients, especially those with diabetes, since they can lower intraglomerular pressure by causing efferent arterioles in the renal glomerulus to dilate and by inhibiting the pro-inflammatory and proliferative effects of angiotensin II. Additionally, they have metabolic effects that are neutral and have been demonstrated to considerably lower proteinuria. Less research has been done on the long-term impact of various medications on CKD. It has been demonstrated that CCBs (Calcium Channel Blockers) effectively control blood pressure, control sympathetic nervous system hyperactivity seen in chronic renal failure, and that diuretics effectively control intravascular volume expansion brought on by fluid retention.

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